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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/512,394      | 02/24/2000  | Kyou-Yoon Sheem      | 3364.P039           | 5787             |

7590

04/28/2003

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EXAMINER

MERCADO, JULIAN A

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 04/28/2003

8/4

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n N .

09/512,394

Applicant(s)

SHEEM ET AL

Examiner

Julian A. Mercado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 February 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 11-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Continued Prosecution Application*

The request filed on February 7, 2003 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/512,394 is acceptable and a CPA has been established. An action on the CPA follows.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. in view of either Yamada et al. or Peled et al, and further in view of Mao et al.

The rejection is maintained for the reasons of record and for the additional reasons to follow. It is noted that the scope of independent claims 1 and 6 has been amended so as to recite the carbon shell to include "carbon derived from amorphous carbon and having an intermediate structure between an amorphous structure and a crystalline structure". Ueda is maintained to teach or at least suggest this feature insofar as the negative active material has carbon core [311] along with a *low crystallinity or amorphous carbon layer* [312]. (emphasis added, col. 8 line 5-

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63) Ueda's recitation of layer [312] as a low crystallinity/amorphous layer is considered to teach or at least suggest that this layer is neither one nor the other but somewhere in the intermediate range therebetween. In that the amorphous carbon [312] in Ueda is disclosed as being of "low crystallinity or amorphous carbon layer", it is the examiner's position that this teaching of a "low crystallinity or amorphous carbon layer" is in reference to the carbon layer [312] having a continuum in structure ranging from, e.g. amorphous, semi-crystalline and crystalline forms. Additionally, in support of the examiner's reasoning Mao is relied upon to teach that "carbon materials are substantially amorphous, although it will be appreciated that they could be partially or completely crystalline or amorphous but possessing crystalline inclusions." (col. 3 line 7-10) The skilled artisan would find obvious, therefore, that the amorphous carbon layer [312] in Ueda would naturally flow to have a structure that is somewhere between "a carbon shell... having an intermediate structure between an amorphous structure and a crystalline structure" in that even a substantially amorphous carbon material possesses crystalline inclusions that results in its overall structure to comprise both crystalline and non-crystalline properties.

The examiner notes that claim 1 appears to have been amended to recite a product-by-process limitation in the carbon shell being "derived from amorphous carbon", however, this process limitation is not given patentable weight as the process limitation does not give breadth or scope to the product claim. The claimed product appears to be the same or similar to Ueda's carbon core/carbon shell active material insofar as having the claimed crystalline and intermediate crystalline/amorphous properties. In the event that any differences can be shown by the product of claim 1 from that shown by the prior art, such differences would have been

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obvious to the skilled artisan as a routine modification of the product absent of a showing of unexpected results. *In re Thorpe*, 227 USPQ 964 (Fed. Cir. 1985).

Applicant's arguments against Ueda, Yamada and Peled are noted, and although each reference is notably discussed separately, a similar argument is made for each of Ueda, Yamada and Peled in arguably not teaching or at least suggesting the presently claimed "carbon shell including carbon derived from amorphous carbon and having an intermediate structure between an amorphous structure and a crystalline structure, and the carbon shell including a metal selected from the group consisting of a transition metal, a semi-metal, an alkali metal and an alkali earth metal". However, applicant is reminded that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

As to arguments against Mao, applicant appears to submit that Mao does not teach, disclose or suggest "carbon derived from amorphous carbon and having an intermediate structure between an amorphous structure and a crystalline structure". This feature of the presently amended invention in having "an intermediate structure between an amorphous structure and a crystalline structure" is believed to be shown by Ueda in view of Mao as discussed above. If by this line of argument and paraphrasing of the claimed invention applicant is in fact submitting that the product-by-process limitation in carbon being "derived from amorphous carbon" is not taught or suggested by the prior art, once again if any differences can be shown by the product of claim 1 from that shown by the prior art, such differences would have been obvious to the skilled

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artisan as a routine modification of the product absent of a showing of unexpected results. *In re Thorpe*, 227 USPQ 964 (Fed. Cir. 1985).

### ***Double Patenting***

Claims 1-10 are rejected under the judicially created doctrine of double patenting over claims 1-9 of U. S. Patent No. 6,355,377 B1 and over claims 1-7 of U.S. Patent No. 6,395,427 B1 since the pending claims, if allowed, would improperly extend the "right to exclude" already granted in each patent.

The subject matter claimed in the instant application is fully disclosed in the '377 and '427 Patents and is covered by each patent since each patent and the application are claiming common subject matter, as follows: the '377 Patent and the '427 Patent recite a negative active material having a crystalline carbon core having a semi-crystalline carbon shell formed around the core. (independent claim 1 for both Patents) The '377 Patent and the '427 Patent recite a metal such as a transition metal, alkali metals, alkali earth metals and semi-metals. (claim 3 and claim 2, respectively)

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the applications which matured into the '377 and '427 Patents. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible

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harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

The examiner notes that while the double patenting grounds for rejection was set forth in the previous Office Action applicant did not address these grounds in the present amendment.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat. 6, 103,423 to Itoh et al. is cited of cumulative relevance.

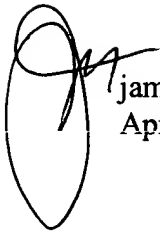
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian A. Mercado whose telephone number is (703) 305-0511. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (703) 308-2383. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



jam  
April 16, 2003



Patrick Ryan  
Supervisory Patent Examiner  
Technology Center 1700